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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/733,328

**Applicant(s)**

MASUOKA ET AL.

**Examiner**

MENG YAO ZHE

**Art Unit**

2195

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 November 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-4, 6-15, 19-25, 31-57, 59-69 and 71-77 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-15, 19-25, 31-57, 59-69 and 71-77 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 6/16/01 4/28/01 1/26/01 1/25/01 12/31/09.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

1. Claims 1-4, 6-15, 19-25, 31-57, 59-69, 71-77 are presented for examination.

***Continued Examination Under 37 CFR 1.114***

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/23/2009 has been entered.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-4, 6-15, 19-25, 31-57, 59-69, 71-77 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ford et al., Pub No. 2002/0107939 (hereafter Ford) in view of Nagasaka et al., Patent No. 6,556,875 (hereafter Nagasaka).
5. Ford and Nagasaka were cited in the previous office action.

6. As per claims 1, 54, 66, Ford teaches a computer based system in communication with a plurality of different types of computing sources of functionality, each computing source of functionality being a service to a user, comprising:

Means for associating each service with a semantic service description (SSD), which semantically describes the plurality of different types of computing sources of functionality of filtering, composing and executing the service, and is discoverable as an available service according to one or more discovery protocols (Para 29, 49: service descriptor corresponds to the SSD), wherein the SSD comprises:

A filter parameter specifying relevance of the service (Para 50, 51: the percentage indicates relevance—the higher the percentage, the more relevant the service is to the customer)

and a grounding including a service invocation interface to the service (Para 52); means for dynamically discovering one or more of the SSDs as the available services through the plurality of discovery protocols to discover the SSDs (Para 30, 33);

means for dynamically presenting to the user feasible possible executable tasks based upon one or more of the filtering the discovered available services according to a context of the user including the composed task, the filter parameter in the SSDs (Para 51); and

means for executing a task by invoking the service, including enabling the user to interact with an invoked available service, based upon the grounding in the associated SSDs including the service invocation interfaces (Para 51, 54: it is obvious that if the user likes the matched services, it may then go ahead and invoke the services).

Ford does not specifically teach a semantic description of the service including a semantic description of input/output parameters of the service as semantic input/output parameters, based upon an ontology; means for real-time composing by a user an executable task comprising combining two or more of the available services by dynamically presenting to the user feasible possible executable tasks based upon one or more of the filtering the discovered available services according to a context of the user including the composed task, the filter parameter in the SSDs; and Means for executing a task by invoking the two or more available services the comprise the task, including enabling the user to interact with an invoked available service, based upon the grounding in the associated SSDs including the service invocation interfaces.

However, Nagasaka teaches semantic description of the service including a semantic description of input/output parameters of the service as semantic input/output parameters, based upon an ontology (Column 8, lines 12-20); means for real-time composing by a user an executable task that is a combination of two or more of the available services by dynamically presenting to the user feasible possible executable tasks based upon one or more of the filtering the discovered available services according to one or more of a context of the user (Column 31, lines 10-19; Column 33, lines 20-25); and Means for executing a task by invoking the two or more available services the comprise the task (Column 29, lines 15-31) for the purpose of creating a virtual service from multiple devices to serve users who needs more than one service.

It would have been obvious to one having ordinary skill in the art at the time of the applicant's invention to modify the teachings of Ford with the specifics of a semantic

description of the service including a semantic description of input/output parameters of the service as semantic input/output parameters, based upon an ontology; means for real-time composing by a user an executable task comprising combining two or more of the available services by dynamically presenting to the user feasible possible executable tasks based upon one or more of the filtering the discovered available services according to a context of the user including the composed task, the filter parameter in the SSDs; and Means for executing a task by invoking the two or more available services the comprise the task, including enabling the user to interact with an invoked available service, based upon the grounding in the associated SSDs including the service invocation interface, as taught by Nagasaka, such that the user of Nagasaka may compose and execute tasks that is a combination of two or more services using the filtered, pre-matched services that are deemed the best by the method of Ford, because it allows for the service provider to create a virtual service from multiple devices to serve users who needs more than one service.

7. As per claims 2, 55, 67, Ford teaches wherein the computing sources of functionality originated in devices, computing applications and electronic services and/or previously defined task (Para 40, 41).
8. As per claims 3, 56, 68, Ford teaches wherein the SSD is expressed in a service description language (Para 29, 37).

9. As per claims 4, 57, 69, Ford teaches wherein each SSD is provided by any combination of a creator or owner of the computing source of functionality or some other third party and the system further comprises means for making available or unavailable a service by making available or unavailable discovery of one or more of SSDs associated with the service (Para 29, 30, 49).

10. As per claims 6, 59, 71, Nagasaka teaches wherein the specified tasks are automatically, or as instructed by the user, as new available services for the purpose of reusing the combined virtual devices (Column 29, lines 15-20, lines 58-66; Column 30, lines 53-55; Column 26, lines 60-64).

11. As per claims 7, 60, 72, Nagasaka teaches wherein the previously specified tasks saved as services are available to the user who created them, to all other users, or to any user-defined, or pre-defined group of users (Column 30, lines 53-55; Column 26, lines 60-64).

12. As per claims 8, 61, 73, Nagasaka teaches wherein the or more discovery protocols include one or any combination of the following: UPnP, UDDI, Local Service Repository, Jini, Bluetooth SDP, Rendezvous, and InfraRed (IR) (Column 9, lines 1-18).

13. As per claims 9, 62, 74, Ford teaches wherein the means for filtering discovered available services according to the context of the user include any one or any combination of the following: User profile, Task at hand, User device characteristics, User location, User motion status, User network connectivity, User specified keywords,

features of a set of services when considered as a whole, individual service features (Para 49).

14. As per claims 10, 63, 75, Ford teaches wherein real-time composing by the user of the executable task includes any one or any combination of the following: a planning-based, automated system, or an interactive user interface that supports any one or any combination of the following elements: visual, voice, text, Braille, tactile (Para 40).

15. As per claims 11, 64, 76, Ford teaches wherein the SSD service invocation interface is according to one or more of a remote procedure call including Web Services calls, UPnP actions, CORBA, JINI, RMI, RPC, DCE, DCOM, KQML, FIPA-ACL InfraRed (IR), Local function call, and Local object call or code described direction in the SSD (Para 48).

16. As per claims 12, 65, 77, Nagasaka teaches managing a computing source of functionality as an available service through the associated SSD by any one or any combination of the following: Graphical user interface, service execution, device interaction, events from the operating system of the graphical user-operated controlling creating, provision, holding the associated SSD, executing or interacting with the computing source of functionality or processing events from an operating system of a user-operated device (Column 24, lines 50-54).

17. As per claim 13, Nagasaka teaches further comprising: a module to publish the SSD as available service by making the SSD discoverable through one of the protocols; a module to discover the SSDs as the available services as a service discoverer; a



module for automatically specifying tasks according to user's goals or for assisting the user in specifying tasks by providing the user with information about how the services comprising the tasks can be combined (Column 23, lines 28-34; Column 24, lines 35-50); a module for assisting the user with executing tasks, by invoking the services that the task is composed of and providing the user with means for interacting with the invoked services as they are executed, and a User Interface that assists the user with Service Discovery, Service Filtering, Service Composition, Service Execution and the saving of defined tasks for future use (Column 24, lines 50-54).

18. As per claim 14, Nagasaka teaches wherein the modules execute on a single computing device or wherein the modules, or subcomponents of the modules, are distributed across multiple computing devices and are accessible by programmatic interfaces that are accessible to the User Interface that is preferably running on the device operated by the user (Column 33, lines 1-13).

19. As per claim 15, Ford teaches wherein the user interface enables an executable workflow composition of the task according to a sequence of invoking the Service Discovery, followed by Service Filtering, followed by Task Specification, followed by Task Execution (Para 30, 49).

20. As per claim 19, Nagasaka teaches wherein the User Interface is a graphical one and comprises any combination of: a Discovery Pane for displaying discovered services and filtered services; a Details Pane for displaying selectable additional information of a selected and filtered service from the Discovery Pane; a Composition Pane for

displaying listings of matched services from Discovery Pane; a Construction Pane for constructing a composition of services; an Information Pane for displaying general information about the processes of the tool, including information about the progress of the execution; a Save Pane for saving a composition of services; wherein all or a subset of the panes are simultaneously displayable to the user and wherein the user interface real-time updates information in each pane according to a result of an action in another pane (Column33, lines 13-40).

21. As per claim 20, Nagasaka teaches wherein the user interface enables navigating to the Construction pane by either selecting a service from Discovery pane and choosing the construct function, or by selecting a pair of matched services and choosing the construct function (Column 30, lines 53-67).

22. As per claim 21, Nagasaka teaches wherein the user interface enables adding and/or removing services from a currently composed task in the Construct pane by choosing the plus or minus function for each possible position that an insertion or deletion is possible, according to the discovering and the filtering (Column 27, lines 45-65).

23. As per claim 22, Nagasaka teaches wherein the user interface enables the user to execute a specified task by choosing the execution function when that task becomes executable, as automatically determined by the underlying back-end system, while either at the Construct pane or the Composition pane (Column 27, lines 45-65).

24. As per claim 23, Nagasaka teaches wherein the system automatically appends any, pre-defined or user-defined compatible composition of available services before or after a partially specified composition by the user and executes the complete composition whenever the user chooses the execution function (Column 27, lines 45-65).

25. As per claim 24, Nagasaka teaches wherein a composition of services as the task is extendable with other available discovered and filtered services (Column 27, lines 45-65).

26. As per claim 25, Nagasaka teaches wherein the User Interface is a graphical one and comprises panes including any combination of: a Discovery Pane for displaying discovered services and filtered services; a Details Pane for displaying additional information of a selected service from the Discovery Pane; a Composition Pane for Displaying listings of matched services from Discovery Pane; a Construction Pane for constructing a composition of services; an Information Pane for displaying general information about the processes of the tool, including information about the progress of the execution; a Save Pane for saving a composition of services in terms of criteria; wherein at any given time only one of the tabs is visible to the user and actions on each of the panes results in automatically updating the related information displayed in other panes (Column 33, lines 20-38).

27. As per claim 31, Nagasaka teaches wherein the User Interface is a graphical one and comprises a first pane for displaying discovered services and filtered services and a

second pane for displaying the current composition as composed by the user and controls for going back and forth in the history of the composition and a control for executing composition whenever possible (Column 33, lines 20-38).

28. As per claim 32, Nagasaka teaches wherein the User Interface automatically places a selected service to the proper place of the composition sequence (Column 28, lines 26-45).

29. As per claim 33, Nagasaka teaches wherein the User Interface will automatically complete the composition whenever possible, including the case when the available filtered services can only be combined in a single manner for a composition that can be executed (Column 28, lines 60-67).

30. As per claim 34, Nagasaka teaches wherein the User Interface is a web client (Column 33, lines 1-12).

31. As per claim 35, Ford in view of Nagasaka does not specifically teach wherein the web client comprise a browser to pop-up a new window or re-direct the browser to a new link that allows the user to enter information related to the execution of the task or feedback regarding the executed task.

However, since redirection to new links is commonly practiced in the art of network interface for the purpose of providing friendly user experience, it would have been obvious to one having ordinary skill in the art at the time of the applicant's invention to incorporate wherein as the task is executed the user's browser might pop-up a new window or re-direct the browser to a new link that allows the user to enter

information related to the execution of the task or feedback regarding the executed task as part of the invention in order to better user experiences.

32. As per claim 36, Ford teaches wherein the User Interface is a command line Interface, wherein each time the user types text that can be matched against discovered and/or filtered services, upon the user pressing a pre-assigned key, it inserts the matched service or, if multiple matches exist it provides a listing of them for the user to select by means of further typing text that matches one of the many services (Para 49).

33. As per claim 37, Ford in view of Nagasaka does not specifically teach wherein the sequence of user selected service corresponds to the task and a single user input executes the task.

However, since keeping track of what kind of service services what kind of task is commonly performed in the art of task management for the purpose of providing the correct service for a task, it would have been obvious to one having ordinary skill in the art at the time of the applicant's invention to modify the teachings of Ford with wherein the specified tasks are saved, automatically, or as instructed by the user, as new available services for the purpose of reusing the combined virtual devices, because it allows for the right services to be provided to a task.

34. As per claim 38, Nagasaka teaches wherein the Discovery module, Filtering Module, Composition Module and Execution module and User Interface execute on the same computing device (Fig 21, unit 100 includes everything).

35. As per claim 39, Ford teaches wherein the Composition Module comprises an Inference Engine that can identify all possible pair wise combinations of services that can be successfully executed in a composition given semantic descriptions of the constituent services (Para 40).

36. As per claim 40, Ford teaches wherein the task specifier comprises an inference engine presenting to the user the feasible possible executable task by identifying all possible compositions of the available services as possible executable tasks (Para 30).

37. As per claim 41, Ford teaches wherein the number of possible pair-wise matches or compositions of services that are returned by the Inference engine might be restricted by criteria that include an upper bound on computational resources, an upper bound on computing time, the number of services in a composition, or by a pre-determined total number of pair-wise matches or compositions to be computed (Para 49, 53).

38. As per claim 42, Ford teaches wherein the Inference Engine includes a composition logic wherein the composition logic is a rule, or a set of rules, or a set of logic statements as task composition logic (Par 40).

39. As per claim 43, Ford teaches wherein the discovery module uses local semantic service description (SSD) databases or accesses remote SSD databases and retrieves the SSDs of the found service from those databases, using the service's ID specific to the discovery mechanism through which the service is found (Para 29, 49).

40. As per claims 44, 45, Ford in view of Nagasak does not specifically teach wherein the discovery mechanisms is UPnP and the ID is Unique Device Name (UDN) of UPnP.

However, since UPnP is commonly employed for device discovery and connection at the time of the applicant's invention, it would have been obvious to one having ordinary skill in the art to specifically use UPnP in order to connect devices with one another.

41. As per claim 46, Nagasaka teaches wherein the User Interface is running on a computing device that is different than the computing devices Discovery Module, Filtering Module, Composition Module and Execution module execute (Column 33, lines 1-15).

42. As per claim 47, Nagasaka teaches wherein the User Interface is a web client (browser) that communicates with the Discovery, Filtering, Composition and Execution Modules using http (Column 33, lines 1-15).

43. As per claim 48, Nagasaka teaches wherein the User Interface is an application that executes on the end-user's computing device and communicates with each of the Discovery, Filtering, Composition and Execution modules via the programmatic interface of these modules (Column 33, lines 1-15).

44. As per claim 49, Ford teaches wherein the end-user is using any of a desktop, laptop, pen computer, PDA or mobile phone (Para 39).

45. As per claim 50, Nagasaka teaches wherein a service may have one or more interfaces for the user to interact with the service prior and during its execution (Column 32, lines 20-30).

46. As per claim 51, Ford in view of Nagasaka does not specifically teach wherein a service comprises any one of: "View on Display" which lets the user to view a user-specified document on a display and optionally control how it is shown; "View on Multiple Displays" which lets the user to view a user-specified document on more than one display and optionally control how it is shown; "Map Viewer" which lets the user to view a map of a user-specified location and optionally control how it is shown; "Map Router" which lets the user to view a map or textual description of the route from/to a user-specified location from/to a predefined or a user-specified location optionally control how it is shown; "Instance Providing Service" which provides, when executed, a semantic instance where a semantic instance is an instance of a class described in an ontology; "Print" which lets the user to print a user-specified document or an semantic instance in a specific format on a printer in a pre-defined way or optionally control how it is printed; "Fax" which lets the user to send a fax of a user-specified document to a user-specified fax number and optionally control how it is faxed; "Play Video" which lets the user to play a user-specified video content and optionally control how it is played; "Play Audio" which lets the user to play the user-specified audio content and optionally control how it is played; "Digital Photo Frame" which lets the user to show a user-specified image content and optionally control how it is shown; "Location Determination" which automatically determines the location of a user-operated device; "Directory



Publisher" which lets the user to choose one instance out of set of instances of the same type; "Telephone Dialer" which lets the user to dial a user-specified phone number; "TC Storage" which lets the user to store or retrieve files; "Copy to Removable Storage" which lets the user to store one or a set of files into predefined removable storage media and optionally control how they are saved; "Emailer" which lets the user to send email to a user-specified email address optionally with attached user-specified documents and optionally control how it is sent; "List chooser" which lets the user to choose an semantic instance from the list of semantic instances of the same type; "Property chooser" which lets the user to choose one of the properties from a semantic instance; "Your input" which lets the user to input the values for the attributes of the semantic object; "Instance viewer" which lets the user to check and modify a semantic instance; "Local Instance Selector" which lets the user to select one or more semantic instances local to the computing device; "Semantic Instance Copier" which lets the user to copy the semantic instance into the local computing device; "L-Note" which lets the user to read and leave notes pertinent to a location; "Database publisher" which publishes a whole of or a part of a table from a database; "Place information" which provides information related to the place; and "Hosted Services" which uses the client-side browser functionalities to accomplish their tasks, including "Upload File" to let the user to upload a file from the client device, "URL to input" to let the user to input an URL, and "View on Browser" to let the user view the file on the client device.

However, since all these viewing and user interaction techniques above are commonly practiced in the art of user interface at the time of the applicant's invention for

the purpose of bettering user experience, it would have been obvious to one having ordinary skill in the art at the time of the applicant's invention to modify the teachings of Ford in view of Nagasaka with the specifics of techniques above in order to better user experiences.

47. As per claim 52, Ford teaches wherein the means for creating, removing, and managing services includes any one or combination of the following: means for making SDSs available through one or more of the discovery mechanisms, means for changing the discovery mechanism to use, means for holding the SDS, means for recovering the SDS to one of the discovery mechanisms, means for removing the SDSs from discovery mechanisms, and means for changing its publishing parameters including expiration, invocation limit, and access control (Para 53).

48. As per claim 53, Ford in view of Nagasaka does not specifically teach wherein the means for creating, removing, and managing services comprise any one or a combination of: "PIPE" which provides local or remote APIs to publish and optionally manage services, and optionally provides the user with user interfaces to publish and manage the services; "Semantic Instance Scrapers for Applications" which publishes the instances as they become available for the application and optionally lets the user manage the service provisions; "Instance Selector with Instance Providing Service Creation" which lets the user publish the instance the user selected for the instance selector service and optionally lets the user manage the service provisions; "White hole" which lets the user publish objects from a local computing device as semantic instances through its user interface and optionally lets the user manage the service provisions;

"Public Directory" which lets the user publish instances on a device and optionally lets the user manage the service provisions; "Bank" which lets the user publish instances through its service invocation and optionally lets the user manage the service provisions; "Image/AudioNideo Service Control" which lets the user publish instances created by or from the devices and optionally lets the user manage the service provisions; "Removable Media Publisher" which lets the user publish instances on the removable media inserted into a computing device and optionally lets the user manage the service provisions; and "Fax" which publishes the documents received and optionally lets the user manage the service provisions.

However, since all these user interaction techniques above are commonly practiced in the art of user interface at the time of the applicant's invention for the purpose of bettering user experience, it would have been obvious to one having ordinary skill in the art at the time of the applicant's invention to modify the teachings of Ford in view of Nagasaka with the specifics of techniques above in order to better user experiences.

### ***Response to Arguments***

49. Applicant's arguments filed on 11/23/2009 have been fully considered but are not persuasive.

50. In the remark, the applicant argued that:

- i) Ford in view of Nagasaka does not teach "real-time composing by a user an executable task...based upon filtering...of the discovered services..."

- ii) Ford and Nagasaka does not teach "semantic service description" having "an I/O parameter mapping...".

51. The Examiner respectfully disagrees with the applicant. As to point:

- i) Ford teaches all the details about filtering and finding the best match of services based on the needs of the user (Para 29, 49, 50, 51). Ford also teaches that once multiple services that are deemed to match the user's needs, the service information is returned to the user and it is then up to the user to either use the found services or not (Para 51, 54). What Ford does not teach is that the user may compose a task using a COMBINATION of services. This is where Nagasaka comes in. Nagasaka teaches that a user may compose a task using two or more services (Column 31, lines 10-19; Column 33, lines 20-25). Combining the two references, therefore, results in composing task using two or more services based on filtering of the discovered services from those found by Nagasaka.
- ii) Nagasaka teaches semantic description of the service including a semantic description of input/output parameters of the service as semantic input/output parameters, based upon an ontology in Column 8, lines 12-20. This claim limitation is interpreted to mean a description of service's I/O parameters. Nagasaka teaches exactly this in Column 8, where he describes that the controller has information about a service providing device's I/O data type.

Furthermore, since the claim limitation states that a grounding including a service invocation...AND/OR an I/O parameter mapping, it includes the case where the grounding includes a service invocation only. Therefore, the Examiner does not address the limitation regarding the I/O parameter mapping.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MENGYAO ZHE whose telephone number is (571)272-6946. The examiner can normally be reached on Monday Through Friday, 7:30 - 5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on 571-272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Li B. Zhen/

/Mengyao Zhe/

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Primary Examiner, Art Unit 2194